



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

Mail Stop 3720

February 18, 2010

Mr. Carl Russo
President and Chief Executive Officer
Calix Networks, Inc.
1035 N. McDowell Blvd.
Petaluma, CA 94954

Re: Calix Networks, Inc.
Amendment No. 4 to Form S-1
Filed February 9, 2010
File No. 333-163252

Dear Mr. Russo:

We have reviewed your amended filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 37

Significant Factors, Assumptions and Methodologies Used in Determining Fair Value, page 42

1. We repeat comment one from our letter dated January 8, 2010. We note your response to comment nine from our letter dated December 17, 2009. We may have further comments after we review your discussion of the reasons for any variance between your common stock valuation and the expected initial public offering price.

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Quarterly Results of Operations, page 53

2. We note the significant increase in revenue for the quarter ended December 31, 2009 and the lack of a meaningful discussion of the reasons for such an increase. Please reconcile the revenues for the quarter ended December 31, 2009 with the revenues for the preceding quarters of 2009 that seemed significantly lower than the prior year except for the quarter ended September 30, 2009. We also note that your largest customer had the largest percentage of accounts receivable that was disproportionate to its percentage sales for the year. Please discuss in detail the reasons for the large orders from your customer in the latter portion of 2009, including any inducements that you offered to facilitate the orders. Discuss if the customer was given favorable payment terms and provide us with a detailed description of those terms.

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

You may contact Sharon Virga, Staff Accountant, at (202) 551-3385, or Dean Suehiro, Senior Accountant, at (202) 551-3384 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Knight, Staff Attorney, at (202) 551-3370, Kathleen Krebs, Special Counsel, at (202) 551-3350, or me at (202) 551-3810 with any other questions.

Sincerely,

Larry Spigel
Assistant Director

cc: by facsimile to (650) 463-2600
Patrick A. Pohlen, Esq.
(Latham & Watkins LLP)